

CLAIMS

What is claimed is:

1. In an anchoring assembly for insertion in skeletal bone, said anchoring assembly having a linking member having a threaded first end and a tapered second end;

a bone-engaging member having a first end adapted to engage said bone and a second end comprising a retention cavity constructed and arranged to engage said linking member second end, said retention cavity having a substantially-spherical exterior surface and a circular open mouth;

the improvement comprising a bracing device in said retention cavity for selectively maintaining said linking member second end in a chosen orientation within said retention cavity, said bracing device in the form of a split retention ring having a diameter greater than the diameter of said circular open mouth and adapted to frictionally engage said linking member second end; and

a support collar adapted for placement against said bone-engaging member second end, said collar having a contoured surface sized and shaped to adjustably engage said exterior surface of said bone-engaging member second end;

1           whereby said bracing device selectively prevents relative  
2 motion between said linking member and said bone-engaging  
3 member.  
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5           2. In an anchoring assembly of Claim 1, wherein said  
6 support collar includes a securing nut mounted on said threaded  
7 first end of said linking member;

8           said split retention ring mounted within an entrance to  
9 said retention cavity, said split retention ring comprising a  
10 main body having a tapered aperture therethrough and a gap, the  
11 tapered aperture being complementary to said taper of said  
12 linking member spherical second end, thereby preventing removal  
13 of said linking member second end from within said retention  
14 cavity, whereby tightening said securing nut draws said  
15 linking member second end against said split retention ring  
16 reducing said gap, thereby preventing motion of said linking  
17 member with respect to said bone-engaging member.  
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19           3. In an anchoring assembly of claim 2, wherein said  
20 retention cavity has a spherical inside wall, said wall  
21 narrowing toward said circular mouth, whereby tightening of  
22 said securing nut draws said linking member second end against  
23 said split retention ring forcing said split retention ring  
24 along said narrowing spherical inside wall reducing said gap

1 and applying progressive pressure on said linking member.

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3 4. In an anchoring assembly of claim 3, wherein said  
4 first end of said bone-engaging member has screw threads to  
5 engage said bone.

6  
7 5. In an anchoring assembly for use with a spinal  
8 fixation system, said spinal fixation system including at least  
9 one spine stabilizing rod and at least one connector adapted to  
10 selectively engage said at least one stabilizing rod;

11 a linking member having a threaded first end and a tapered  
12 second end, said threaded first end being sized to engage said  
13 connector;

14 a bone-engaging member having a first end adapted to  
15 engage said bone and a second end comprising a retention cavity  
16 constructed and arranged to engage said linking member second  
17 end, said retention cavity having a substantially-spherical  
18 exterior surface;

19 a locking means for attaching said linking member second  
20 end to said connector;

21 the improvement comprising a bracing device resiliently  
22 disposed in said retention cavity for selectively maintaining  
23 said linking member second end in a chosen orientation within  
24 said retention cavity, said bracing device in the form of a

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1 split retention ring;

2 whereby said bracing device prevents relative motion  
3 between said anchoring assembly and said connector once said  
4 anchoring assembly and said connector have been arranged in a  
5 spinal-curve-correcting orientation.

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7 6. The anchoring assembly of Claim 5, wherein said  
8 locking means includes:

9 a securing nut adapted to engage an exterior of said  
10 linking member threaded first end; and

11 a locking bolt adapted to engage internal threads located  
12 within a bolt cavity longitudinally disposed within said  
13 linking member second end;

14 whereby said securing nut maintains said linking member  
15 second end in place when said second end extends therethrough,  
16 and whereby said locking bolt prevents unwanted relative motion  
17 between said securing nut and said linking member.

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19 7. The anchoring assembly of Claim 6, wherein said split  
20 retention ring is mounted within an entrance to said retention  
21 cavity, said split retention ring comprising a main body having  
22 a substantially spherical cross section with opposed ends  
23 defining a gap and a tapered aperture therethrough, the  
24 diameter of said spherical cross section being smaller than the

1 diameter of said linking member spherical second end, whereby  
2 said split retention ring prevents removal of said linking  
3 member.  
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